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BULLETIN
OF THE
TORREY BOTANICAL CLUB

FEBRUARY 1900

New Species of Fungi from various Localities with Notes on some
published Species

BY J. B. ELLIS AND B. M. EVERHART

Echinodontium E. & E. nov. gen. (Family *Hydnaceae*).

Differs from *Hydnum* in the thick, woody pileus of *Fomes* and the teeth beset with spines, as in *Mucronoporus* and *Hymenochaete*.

E. tinctorium E. & E.

Fomes tinctorius E. & E. Bull. Torr. Club, 22 : 362. 1895

Hydnum tinctorium Lloyd in literis. On *Abies grandis*, Jonesville, Idaho (Prof. C. V. Piper, comm. C. G. Lloyd).

In the specimen from which *Fomes tinctorius* was described the teeth were all broken off so as to resemble a *Polyporus*: but what were taken for pores were only the hollow bases of the brittle, cinereous teeth which, in the Idaho specimens are about 1 cm. long and 1.5–2 mm thick at the base. The hymenial surface is rather sparingly clothed with subconical, reddish-brown spines, 20–30 × 6–7 μ . The spores at first are nearly hyaline.

The characters of this fungus differ so much from *Hydnum* that we propose it here as a new genus.

Corticium macrosporum E. & E.

On dead limbs of *Fraxinus*? Ohio (Lloyd, no. 3113).

Dull white, appressed, thin, appearing at first in orbicular patches 3–5 mm. in diameter, the narrow, white, cottony margin sometimes narrowly involute, at length confluent: spores ovate-elliptical, 10–14 × 7–8 μ , abundant.

[Issued 17, February.]

(49)

The hymenium is of a somewhat waxy nature, smooth, but uneven, showing the inequalities of the bark.

***Hymenochaete asperata* E. & E.**

On pine bark, Abita, East Louisiana, Jan. 1898 (Langlois, no. 2647).

Effused, adnate, dull yellow, becoming a little darker in the center, thin, margin irregular, spreading over the bark in irregular shaped patches, 2–6 or more cm. in extent: setae stout, $60\text{--}70 \times 7\text{--}8 \mu$, tubercular-roughened above and often prolonged at the tip into a hyaline, lance-shaped slender point $20\text{--}30 \mu$ long, but often the tips of the setae are rounded and obtuse but still hyaline: spores small, subglobose, 3μ .

Seems different from *H. scabriseta* Cke.

***Zygodesmus pubidus* E. & E.**

Forming a thin, loosely compacted, light yellow, membranaceous, subpuberulent coating on rotten wood. Newfoundland (Rev. A. C. Waghorne, no. 1026).

Hyphae branching at right angles, subhyaline, sparingly septate, with an occasional zygodesmoid joint: conidia short-elliptical, hyaline, smooth, $4 \times 3 \mu$, with a single large mostly eccentric nucleus.

***Mucronoporus sublilacinus* E. & E.**

On pine logs, Abita Springs, East Louisiana (Langlois, no. 2529).

Pileus semiorbicular, firm, flat, 6–7 cm. long, 9–10 cm. broad, repeatedly zonate with elevated ridges and shallow furrows; surface at first clothed with a cinereous-gray cuticle which finally disappears: margin spreading, subacute, pores round, 0.5–1 cm. long, mouths slightly uneven, obtuse, 200μ in diameter (not including dissepiments), lilac color on the surface, cinnamon color within; flesh bright cinnamon-yellow, zonate within, about 0.5 cm. thick in the middle, thinning out towards the margin; spines stout, cylindric-conical, projecting part $15\text{--}20 \times 4 \mu$.

The lilac colored, larger pores and thicker substance distinguish this from *M. licnoides* Mont.

***Dacryomyces cenangioides* E. & E.**

On dead birch limbs, Nuttallburg, W. Va., Dec. 1897 (L. W. Nuttall, no. 922).

Erumpent, mostly cespitose and connate, forming tufts 0.5–1 cm. in diameter, obconic, discoid, concave above at first but when mature convex above, variously wrinkled, folded and immarginate, liver-color with a lilac tint when fresh, drab-color when dry and quite fragile, texture of coarse inflated hyphae resembling, when the dry plant is broken open, a mass of dirty light-yellowish tomentum: basidia clavate-cylindrical, $40\text{--}50 \times 6\text{--}7 \mu$ with two short, obtuse sterigmata: spores shaped like apple seeds, $12\text{--}20$ (mostly 15) $\times 6\text{--}8 \mu$, filled with minute nuclei, becoming 3 or more septate, hyaline.

When dry, bears a striking resemblance to a cespitose *Cenangium*. *Tremella sarcoides* (Dicks.) is found with this.

***Asterina Mexicana* E. & E.**

On *Agave Mexicana*, City of Mexico, May, 1898 (Dr. B. F. G. Egeling).

Perithecia amphigenous, subastomous, small (110–150 μ), rough, black, fringed around the base with coarse, brown, subincurved hairs, seated on appressed, reticulately branched, black mycelium of the *Meliola* type: asci obovate, abruptly short-stipitate, $40\text{--}60 \times 20\text{--}30 \mu$, or becoming subglobose, 8-spored: sporidia crowded, clavate-cylindrical, uniseptate and constricted near the upper end, upper cell globose, and easily separable, lower cell oblong, $22\text{--}27 \times 8\text{--}10 \mu$, filled with granular matter, nearly hyaline, becoming brown.

The perithecia are crowded in orbicular patches about 1 cm. diam., often with a white spot in the center.

***Melanomma gregarium* E. & E.**

On decorticated cottonwood limbs, Rooks Co., Kansas, Jan. 1899 (Bartholomew, no. 2532).

Perithecia gregarious, globose-conical, slate color and minutely roughened, 250–350 μ in diameter, base slightly sunk in the wood, finally collapsing above: ostiolum papilliform, black and shining: asci clavate-cylindrical, p. sp. $50\text{--}70 \times 10\text{--}12 \mu$ with abundant, filiform paraphyses: sporidia subbiserial, oblong or ovate-elliptical, 3-septate and finally slightly constricted at the septa, $12\text{--}15 \times 5\text{--}7 \mu$.

Differs from *M. rhyodes* E. & E. in its broader, shorter sporidia and collapsing perithecia.

Amphisphaeria aspera E. & E.

On *Tetradymia*, Montrose, Colorado (Bethel, no. 517).

Perithecia gregarious or cespitose, the lower half sunk in the bark, 400–600 μ in diameter, depressed-globose, densely roughened with projecting points, ostiolum papilliform or short-cylindrical: asci clavate-cylindrical, short-stipitate, $80-90 \times 75 \mu$, obscurely paraphysate: sporidia uniseriate, oblong, subinequilateral, uniseptate, not constricted, $20-30 \times 8-10 \mu$, clear brown.

Teichospora brachyasca E. & E.

On decorticated limbs of *Quercus Watsoni*, Rooks Co., Kansas, May, 1899 (Bartholomew, no. 2599).

Perithecia scattered, superficial, depressed-globose, 0.25–0.35 mm. in diameter, ostiolum obscure, papilliform or wanting: asci obovate-oblong, sessile or nearly so, $35-45 \times 16-20 \mu$, sporidia irregularly crowded, obovate, 3-septate, slightly constricted, more distinctly so at the middle septum, one or two cells divided by a longitudinal septum, $14-18 \times 6-7 \mu$.

Schizostoma Nevadensis E. & E.

On decorticated *Ephedra Nevadensis*, Mesa Verde, Colorado, July, 1899 (Bethel, no. 518).

Perithecia gregarious, globose or subelliptical, sunk in the matrix with the upper part projecting, about .5 mm. in diameter, ostiolum narrow, not very conspicuous: asci cylindrical, $75-80 \times 7-10 \mu$, with abundant paraphyses: sporidia overlapping-uniseriate or biseriate, oblong-fusoid, uniseptate, scarcely constricted, $15 \times 4-5 \mu$, pale-brown.

Mycosphaerella lithospermi E. & E.

On dead stems of *Lithospermum officinale*, Gillivray, Ontario, Canada, June, 1898 (Dearness, no. 2862).

Perithecia scattered, pustuliform-prominent, but subcuticular, 170–200 μ in diameter, flattened or sub-collapsed above: asci oblong cylindrical, short-stipitate, $70-80 \times 12-15 \mu$: sporidia biseriate, ovate-elliptical, hyaline, uniseptate and constricted, $12-16 \times 6-8 \mu$.

Leptosphaeria fraseriae E. & E.

On dead stems of *Frasera speciosa*, Rico, Colorado, July, 1899 (Bethel, no. 502).

Perithecia scattered, subcuticular, but by the falling away of the cuticle, superficial, globose, becoming depressed, 0.25 mm. in diam.,

ostiolum conic-papilliform, distinct: asci cylindrical or clavate-cylindrical, stipitate, paraphysate, $80-110 \times 8-10 \mu$: sporidia uniseriate, oblong-elliptical, yellow-brown, 3-septate, becoming lightly constricted, especially at the middle septum, $14-16 \times 7-8 \mu$.

The sporidia are much like those of *L. fuscella* B. & Br., but in that species the perithecia are buried and have no ostiolum.

Thyridium vitis E. & E.

On dead shoots of *Vitis riparia*, Rooks Co., Kansas (Bartholomew).

Perithecia gregarious, often 2-3 subconfluent, entirely buried in the bark which is raised into low, flattish pustules over them, $250-300 \mu$ in diameter, grayish inside, thin-walled, globose: ostiolum inconspicuous, barely penetrating the bark: asci clavate-cylindrical, short-stipitate, $100-115 \times 15-18 \mu$, with abundant paraphyses: sporidia obliquely uniseriate, or subbiseriate above, obovate-oblong, brown, 5-7-septate, constricted in the middle, obtusely rounded at the ends, $18-22 \times 10-12 \mu$, with a longitudinal septum running through one or more cells.

Differs from *T. antiquum* E. & E. in its larger asci and larger, differently shaped 5-7-septate sporidia.

Hysterographium graminis E. & E.

On dead culm of *Panicum virgatum* and *Andropogon provincialis*, Rooks Co., Kansas, March, 1899 (Bartholomew, no. 2556).

Erumpent-superficial, 0.5-1 mm. long, $150-200 \mu$ broad, rounded at the ends, with a slight longitudinal furrow along the center: asci clavate-oblong, short-stipitate, paraphysate, p. sp. $60-75 \times 15-20 \mu$: sporidia biseriate, oblong-elliptical, yellow, becoming brown, 3-septate, compressed, scarcely or only slightly constricted at the septa, $16-20 \times 7-10 \mu$, $5-6 \mu$ thick, with a longitudinal septum on the flattened side running through all the cells, viewed edgewise only the transverse septa are visible.

The sporidia resemble very much those of some species of *Pleospora*, as *P. aurea*, *P. compressa*, *P. permunda*, etc.

Hypoderma equiseti E. & E.

On dead stems of *Equisetum hyemale*, Rooks Co., Kansas, Jan., 1899 (Bartholomew, no. 2535).

Perithecia oblong or linear, 1-3 mm. long, covered by the thin epidermis which is split along the middle: asci oblong-clavate,

35-45 $\times$ 10-12 μ , short-stipitate, paraphysate? sporidia biseriate, oblong, obtuse, uniseptate, constricted, 13-15 $\times$ 4-5 μ , hyaline.

Phyllosticta canescens E. & E.

On leaves of *Ribes divaricatum*, Bear Creek, near Volmer, Idaho, Oct., 1898 (Prof. L. F. Henderson, no. 4707).

Spots large, irregularly occupying and killing half of the leaf, or lobe of a leaf, rusty brown whitening out and becoming minutely furfuraceous above, the surrounding parts of the leaf becoming yellowish: perithecia epiphyllous, prominent, small, 80-100 μ , black: sporules oblong- or ovate-elliptical, mostly with a nucleus in each end, 5-8 $\times$ 2.5-3.5 μ .

PHYLLOSTICTA GALACTIS Cke. Grev. **14**: 70. 1885. Exsicc.
E. & E., N. A. F. 3153

On leaves of *Galax aphylla*, West Va. (Nuttall).

Spots irregular, pale brown or cinereous, without any distinct margin: perithecia gregarious in dense patches, very minute (80 μ), immersed at the base, punctiform, black, shining: sporules cylindrical, rounded at the ends, 2-4-nucleate, hyaline, 12-15 $\times$ 4 μ .

The specimens in N. A. F. are poor and do not well represent this species.

Phyllosticta zonata E. & E.

On living leaves of *Pirus Ioensis*, Ames, Iowa, August, 1899 (H. Harold Hume).

Spots irregular, reddish-brown, 2-10 mm. in diam. or confluent over the greater part of the leaf: zonate, definite, with margin very slightly raised and a little darker: perithecia punctiform, minute, innate, covered by the thin, whitish epidermis, epiphyllous: sporules oblong-elliptical, 3.5-4 $\times$ 1.5 μ .

Differs from *P. Briardi* Sacc. and *P. limitata* Pk. in its smaller sporules and zonate spots.

Phoma erysiphoides E. & E.

On *Gnaphalium*? and *Achillea Millefolium*, Morrison, Colorado, May, 1899 (Bethel, no. 472).

Perithecia minute, thickly and evenly scattered on the stems, erumpent-superficial, subglobose, membranaceous, subastomous, of coarse cellular structure: sporules short-elliptical, hyaline, 8-12 $\times$ 6-7 μ .

Rhabdospora pachyspora E. & E.

On dead stems of *Erigeron*? Morrison, Colorado, May, 1899 (Bethel, no. 473).

Perithecia scattered, minute, conic-globose, semierumpent: sporules arcuate, 3-4-nucleate, hyaline, subobtusate, $16-25 \times 3.5-4 \mu$.

Dothiorella rhoina E. & E.

On dead limbs of *Rhus Toxicodendron*, Morrison, Colorado, May, 1899 (Bethel, no. 475 partly).

Perithecia bursting through the epidermis, 4-6 together stromatically connected or scattered singly, raising and finally piercing the epidermis or sometimes on the gregariously crowded and slightly connected at base, .35-.5 mm. in diameter, hemispheric-globose, with a papilliform ostiolum: sporules elliptical or ovate-elliptical, subolivaceous, $4-7 \times 3-4 \mu$.

Exosporium pallidum E. & E. occurs on the same limbs.

Sphaeropsis hederæ E. & E.

On dead stems of *Hedera Helix*, Nuttallburg, West Va., July, 1899 (L. W. Nuttall, no. 961).

Perithecia suberumpent, thickly scattered, rather flattened above, about 0.25 mm. in diameter with an obscurely papilliform or short conical ostiolum: sporules oblong-elliptical, $20-25 \times 8-10 \mu$.

Sphaeropsis helici Cke. & Mass. is said to have a long exserted ostiolum and spores $12 \times 8 \mu$.

Sphaeropsis dircae E. & E.

On dead stems of *Dirca palustris*, near Ottawa, Canada, April, 1899 (Macoun, no. 705).

Perithecia gregarious, minute, raising the epidermis into little pustules perforated at the summit by the minute ostiolum: sporules oblong-elliptical, $15-18 \times 7-8 \mu$.

Diplodia hypoxylodes E. & E.

On dead twigs of *Menispermum Canadense*, Emma, Mo., Nov. 1899 (Rev. C. H. Demetrie, no. 720).

Perithecia erumpent, surrounded by the ruptured epidermis, depressed-hemispherical, convex above, about 1 mm. diameter whitish in the center at first, soon slaty-black, white inside and soon hollow, of carbonaceo-coriaceous texture, resembling the perithecia of

Hypoxylon: sporules oblong brown, becoming uniseptate; $12-16 \times 4-5.5 \mu$ on slender basidia about $20 \times 2 \mu$.

Varies from the usual type of *Diplodia*.

***Ascochyta mali* E. & E.**

On living limbs of *Pirus Malus*, at the Agricultural College, Mich., May, 1899 (C. F. Wheeler).

Spots circular, 0.5–1 cm. in diameter concave, of a pale brick-red color, with the margin narrowly free, sometimes becoming much larger, extending for 2 cm. and nearly surrounding the limb. These spots appear to be formed from the altered substance of the bark which is changed in color and cracks away around the margin from the surrounding bark which remains in its normal condition: perithecia at first solitary, a single one erumpent in the center of the circular disk, finally 2–4 or more scattered on the same disk: sporules oblong or oblong-elliptical, smoky-hyaline, uniseptate, $6-8 \times 2.5-3.5 \mu$. On the same spots also occurs a *Phoma* (*P. ambigua* Sacc.)? with sporules much resembling those of the *Ascochyta* only without any septum, and a *Phlyctaena* (*P. Mali* E. & E.) with filiform sporules curved near one end, $20-27 \times 1.25-1.5 \mu$ in numerous smaller perithecia scattered on the spots. The fungus soon kills the limbs.

***Stagonospora desmodii* E. & E.**

On dead stems of *Desmodium tortuosum*, Lake City, Fla., Oct. 1899 (H. H. Hume).

Perithecia scattered or gregarious on reddish-brown discolored, indefinite spots which become darker, subcuticular, $150-200 \mu$ in diameter, slightly raising the cuticle which is blackened over them: sporules oblong, hyaline, 3–4-guttulate, $8-12 \times 4-5 \mu$.

On the same stems, on elongated black spots with a white center is a *Cercospora* with long, brown, septate hyphae cespitose on a sphaeroid base and slender, hyaline, multinucleate conidia $80-100 \times 3-4 \mu$, becoming multiseptate (*Cercospora melaleuca* E. & E.).

***Camarosporium hederæ* E. & E.**

On dead shoots of *Hedera Helix*, Nuttallburg, W. Va., July, 1899 (L. W. Nuttall, no. 958).

Perithecia erumpent-superficial, ovate, attenuated above into a short-conical or short-cylindrical ostiolum, about 200μ in diameter, thickly scattered or even densely crowded: sporules globose or

ovate, 1-3-septate, olive-brown, $7-10 \times 5-7 \mu$, occasionally with a longitudinal septum across one or more of the cells.

C. sarmentitum Sacc., on the same host, has spores twice as large but does not differ otherwise. Possibly the W. Va. specimens should be considered as a small-spored form of this.

***Septoria philadelphi* E. & E.**

On leaves of *Philadelphus Lewisii*, near Juliaetta, Idaho, Oct., 1898 (Prof. L. F. Henderson, no. 4702).

Spots amphigenous, irregular in shape, partly limited by the veinlets, 2-10 mm. in diameter, more or less confluent, dirty brown, becoming more or less silvery white: perithecia amphigenous, scattered on the spots, $100-120 \mu$ in diam.: sporules fusoid, mostly curved, 3-6-septate, narrower at one end, 20-40 (exceptionally 60) $\times$ 4-5 μ .

***Septoria fulvescens* Ell. & Halsted.**

On faded leaves of *Acer saccharinum*.

The fungus occurs on leaves already faded to light-yellow by the autumnal frosts. On these leaves, mostly along the main nerves are indistinct blotches of a deeper yellow, 1-1.5 cm. broad and indefinitely limited perithecia hypophyllous on these spots 70-80 μ in diameter, slightly flattened or depressed, numerous: sporules oblong-cylindrical, slightly curved, continuous, hyaline, $7-12 \times 1.5-2 \mu$, mostly not over 10 μ long.

Septoria Salliae Ger. and *S. acerinum* West, have longer and different spots.

***Septoria flagellifera* E. & E.**

On leaves of *Pisum sativum*, Brookings, So. Dakota, July, 1898 (L. W. Carter), comm. Dr. N. L. Britton.

Amphigenous, spots suborbicular, 0.25-1 cm., diameter, subzonate, with a slightly raised border, rusty-brown at first, whitening out in the center: perithecia hemispheric—prominent or subconical, dark amber color, 75-120 μ in diameter, sporules filiform, hyaline, nucleolate, only slightly curved, $80-120 \times 2-2.5 \mu$.

Differs from *S. pisi* West, in the different character of the spots and the much longer sporules.

***Kellermannia alpina* E. & E.**

On dead stems of *Aquilegia coerulea* and other dead herbaceous

stems. Red Mountain, Colorado, June, 1899, alt. 12,000 ft. (Bethel, no. 490 in part).

Perithecia erumpent-superficial, black, depressed-globose, about .35 mm. in diameter, with a papilliform ostiolum, membranaceous, cellular, the cells around the ostiolum arranged in radiating lines: sporules fusoid, 4-6-nucleate, hyaline, prolonged above into a slender, slightly curved awn, including which the length is 30-35 μ , width 2.5-3 μ .

Cylindrosporium smilacinae E. & E.

On *Smilacina amplexifolia* Nutt. Near Lake Coeur d'Alene, Idaho, Aug. 1898 (Prof. L. F. Henderson, no. 4688).

Spots dirty-brown, irregular and indefinite, 2-10 mm. diameter, partly limited by the veinlets, soon confluent over the greater part of the leaf, which turns yellow around them, acervuli amphigenous, tuberculiform-erumpent, black outside, amber-color or flesh-color within: conidia cylindrical or clavate-cylindrical, guttulate, more or less curved, mostly narrowed at one end, hyaline, 50-70 $\times$ 3.5-4.5 μ .

The black, erumpent acervuli have the appearance of a *Phyllochora*.

Pestalozzia crataegi E. & E.

On leaves of *Crataegus parvifolia*, Lake City, Florida, Nov. 1899 (H. H. Hume).

Acervuli black, erumpent, convex, 150 μ in diameter, mostly concentrically arranged on large (0.5-1.5 cm.) brown spots, mostly on the upper side of the leaf, but occasionally hypophyllous: conidia oblong-cylindrical, 5-septate, scarcely constricted, the four inner cells brown, terminal cells small, hyaline, 20-23 $\times$ 7-8 μ , apical cells with a short (4-5 μ), single oblique bristle, pedicel slender, hyaline, 12-15 μ .

Diplocladium cylindrosporium E. & E.

On dead leaves of *Asimina triloba*, Nuttallburg, West Va., July 31, 1899 (L. W. Nuttall).

Fertile hyphae fasciculate, hyaline, erect, 1-2-septate, 50-110 $\times$ 5-6 μ , subdichotomously branched above, the terminal branchlets short and slightly curved, bearing at their tips the cylindrical hyaline, erect, obtuse, uniseptate conidia 40-50 $\times$ 4-5 μ .

The short terminal branches resemble birds' claws. With the fertile hyphae are a few much longer, simple straight ones swollen at the tip.

Hadotrichum lupini E. & E.

On leaves of *Lupinus humilis*, Wyoming (Nelson), on *L. albi-frons*, California (McClatchie), on *Lupinus* sp., Colorado (C. F. Baker).

Fertile hyphae clavate-cylindrical, continuous, olivaceous, $20-25 \times 4 \mu$, densely fasciculate: conidia globose, subolivaceous, smooth, with a rather thick epispore, $10-12 \mu$ in diameter.

In company with *Phyllosticta ferax* E. & E. (Proc. Phil. Acad. 1894: 355).

Mostly in the center of brownish dead spots surrounded by a broad belt of perithecia of the *Phyllosticta* of which it seems to be the conidial stage.

Pilacre pallida E. & E.

On rotten wood, Chattanooga, Colorado, June 19, 1899 (E. Bethel, no. 489).

Gregarious. Stipe stout, 1.5–2 mm. high, .75 mm. thick, equal or slightly contracted below, surrounded at base by white, straight, radiating threads which are closely appressed to the matrix, surface of stipe slightly roughened, dirty-flesh-color: head depressed, subdiscoid, subumbilicate beneath, 1–1.5 mm. across, covered with a thin umber colored membrane which soon disappears, exposing the dirty white, coarsely reticulate capillitium, the fertile threads of which are roughened by minute projecting points bearing the elliptical $6-8 \times 5-6 \mu$, nearly hyaline conidia.

The head finally falls off all but the base which remains as a white convex disk on the top of the stipe.

Exosporium pallidum E. & E.

On dead limbs of *Rhus Toxicodendron*, Morrison, Colorado, May, 1899 (Prof. E. Bethel, no. 475).

Sporodochia bursting through the epidermis, 3–4 or more together, stromatically connected at base or occasionally single, 0.5–0.75 mm. in diameter, mostly flattened above, grayish inside, densely clothed on the surface with the stout ($20-30 \times 5-7 \mu$) hyaline (becoming black)? simple sporophores bearing at their tips the oblong or oblong-elliptical, 2- (sometimes 3-) septate more or less constricted, yellow-brown conidia $25-50 \times 14-18 \mu$.

Differs from *E. clavuligerum* Lk. in its continuous, hyaline sporophores.

***Dasyscypha tuberculiformis* E. & E.**

On dead stems of *Aquilegia coerulea*, Red Mt., Colorado, June, 1899, 12,000 ft. alt. (Bethel, no. 490).

Gregarious, erumpent, tuberculiform, 0.5 mm. in diameter, sub-tremelloid when fresh, clothed with long, white, mostly appressed hairs, immarginate, with a small, round opening at the top, the orifice surrounded by reflexed, straight, white, continuous hairs: asci clavate-cylindrical, short-stipitate, $75 \times 10 \mu$, with straight, linear paraphyses about as long as the asci: sporidia biserial, oblong, hyaline, continuous, $10-12 \times 2.5-3 \mu$.

The specimens were not well matured so that the form and size of the sporidia will have to be more accurately ascertained hereafter.

***Pyrenopeziza Coloradensis* E. & E.**

On dead stems of *Potentilla*, Red Mountain, Colorado, June, 1899, alt. 12,000 ft. (Bethel, no. 492).

Ascomata scattered, superficial, black, with a narrow, slightly incurved margin, disk concave or plane, $\frac{1}{12}$ –1 mm. across: asci clavate-oblong, $100-110 \times 15 \mu$, with simple stout paraphyses: sporidia biserial, elliptical, with two large nuclei, hyaline, $20 \times 10 \mu$.

***Haematomyxa ascoboloides* E. & E.**

On dead herbaceous stems, Takoma Park, Maryland, February 26, 1899 (C. L. Shear).

Erumpent-superficial, orbicular, carnose-tremellose, convex-discoïd and wine-color when fresh, concave and nearly black when dry, 0.5–0.75 mm. in diameter with a slight, dark-colored margin. The surface of the disk when fresh is distinctly roughened by the projecting tips of the asci as in *Ascobolus*: asci clavate-cylindrical, $80-100 \times 12-15 \mu$, yellowish in the mass, paraphyses filiform, branched above, sporidia uniserial, oblong-elliptical, 3-septate and more or less constricted at the septa, rounded at the ends, some of them slightly curved, submuriform, yellowish-hyaline, $18-22 \times 8-10 \mu$.

Also on weather-beaten oak post, Kansas (Bartholomew).

***Puccinia annulata* E. & E.**

On *Epilobium* sp., Yellowstone National Park, July, 1899 (Prof. Aven Nelson, no. 5930).

III. Sori hypophyllous, minute, crowded in orbicular patches 1–4 mm. in diameter surrounded by a narrow pallid ring and cov-

ered more or less with fragments of the ruptured epidermis: teleutospores cuneate or clavate, $25-35 \times 12-15 \mu$, distinctly constricted, smooth, pale-yellow, epispore much thickened at the apex ($8-10 \mu$ thick) and dark-brown, upper cell elliptical or subglobose, lower cell narrowed to the pedicel which is hyaline, attenuated below and about 20μ long.

The sori are nearly black and occur also sparingly along the midrib on the upper side of the leaf.

***Puccinia synthyridis* E. & E.**

On leaves of *Synthyris rubra* Kunth, Pullman, Wash., June, 1898 (Prof. C. V. Piper, no. 390).

III. Sori amphigenous, scattered, 0.5–1 mm. in diameter, covered at first, then erumpent and surrounded by the ruptured epidermis, cinnamon-brown, flattish and pulverulent: teleutospores elliptical, rounded at both ends, constricted in the middle, light brown, epispore smooth or nearly so, slightly thickened at the apex with a flattish, transparent papilla, $20-30 \times 15-20 \mu$: pedicels very short.

Differs from *P. acrophila* Pk. in the absence of any decided spots and the rather smaller spores. Specimens were sent to Mr. Peck who is of the opinion that this is not his *P. acrophila*.

***Puccinia circinans* E. & E.**

On *Pentstemon spectabilis*, Grand Cañon of the Colorado (Prof. J. W. Toumey).

Spots orbicular or irregular, rusty-brown, zonate, darker in the center, 0.5–1.5 cm. in diameter, teleutosori amphigenous, subhemispherical, about .5 mm. in diameter, subcircinately arranged on the spots: teleutospores obovate or elliptical, cinnamon-brown, $30-40 \times 15-20 \mu$, constricted, rounded above, and sometimes below, epispore thickened at the apex and darker: pedicels hyaline, as long as or longer than the spores.

Differs from *P. pentstemonis*, Pk. in the large conspicuous spots and according to Prof. J. C. Arthur, is distinct from *P. Mexicana* Dietel and Holway.

***Puccinia musenii* E. & E.**

On *Musenium tenuifolium*, "Freeze out Hills," Wyoming, July 10, 1898 (Elias Nelson, 4491).

III. Sori pustuliform, oblong, 1–5 mm. long by 1 mm. broad, loosely covered by the lead-colored epidermis which is tardily

ruptured: teleutospores elliptical, scarcely constricted at the septum, rounded at the ends, deep chestnut-brown, $22-30 \times 15-20 \mu$ episporc minutely muriculate-roughened, very slightly thickened at the apex: pedicels short, $10-15 \mu$ long, deciduous.

Seems distinct from any of the other species on the Umbelliferae. Comes near *P. enormis* Fckl. from which it differs in its shorter, deeper colored spores without any apical papilla.

***Puccinia cornigera* E. & E.**

On *Tetranuris Torreyana*, "Freeze-out Hills," Wyoming, July 10, 1898 (Elias Nelson, no. 4852).

III. Sori minute (0.5 mm.) orbicular, crowded, deeply sunk in the leaf and covered by the epidermis, then suberumpent and open above, amphigenous, leaf more or less swollen: teleutospores oblong, broadly constricted in the middle, rather abruptly attenuated or rounded below, episporc thickened above, with a conical, horn-like, subhyaline projection (often oblique) at the apex, $8-12 \mu$ long: pedicel nearly hyaline, $60-80 \mu$ long.

HENDERSONIA DIPLODIOIDES E. & E. Bull. Torr. Club, **25**: 510.
1898

The specific name should be changed to *angustifolia*, as there is already a *Hendersonia diploidioides* E. & E., Bull. Wash. Coll. **1**: 6.

GLOEOSPORIUM ALBOFERRUGINEUM E. & E. Proc. Acad. Nat. Sci. Phil. 1898: 371

A reëxamination of specimens of this species shows only *Discosia maculicola* Ger., the sporules of which may have been mistaken for *Gloeosporium* spores, and if so the species must be abandoned.

USTILAGO SPOROBOLI E. & E. Bull. Torr. Club, **24**: 282. 1897
Ustilago funalis E. & E. *id.* **24**: 257. 1897

This is not distinct from *Ustilago hypodiles* (Schlecht.).

UROMYCES BICOLOR E. & E. Bull. Torr. Club, **24**: 282. 1897

Specimens of this species collected by Professor Aven Nelson in the Yellowstone National Park differ from the original specimen from "Death Valley," in having the teleutospore sori elongated $1-5 \times 0.5-0.75$ mm., finally naked but surrounded by the lead-colored,

ruptured epidermis. On some of the leaves, however, are found the small (0.5–1 mm.) punctiform sori mentioned in the original description. The uredospores are accompanied by paraphyses.

PUCCINIA SIMILIS E. & E., Bull. Torr. Club, **25**: 508. 1898

The measurements of the teleutospores of this species are incorrectly given. They should be $35-55 \times 22-27 \mu$. The uredospores also vary from globose; $15-26 \mu$ in diameter to ovate or elliptical, $20-30 \times 16-22 \mu$ and are coarsely echinulate, much more distinctly so than in *P. tanacetii* according to Prof. J. C. Arthur. This is identical with *P. conferta* D. & H., but the descriptions of these two species are very different. *P. similis* has the sori scattered and larger, and teleutospores rounded at both ends, not to speak of the presence of *Uredo* and *Accidium* in the last mentioned species.

PUCCINIA GRINDELIAE Peck, Bot. Gaz. **4**: 127. 1879

Puccinia variolans Hark. Bull. Calif. Acad. Sci. Feb. 1884, and *Puccinia tuberculans* E. & E. Proc. Phil. Acad. 153. 1893, are synonyms of this species.

CYTISPORA ANNULARIS E. & E. Bull. Torr. Club, **24**: 288.
1897

Found also in Canada, by Mr. Macoun, on *Fraxinus sambucifolia*. When the epidermis is pulled off the perithecia come with it and when dry they are strongly compressed below so as to become cup-shaped.

ANTHOSTOMELLA MAMMOIDES E. & E. Proc. Acad. Nat. Sci.
Phila. 139. 1893

A reëxamination of the original material shows that some of the larger pustules contain 2–4 perithecia.

The species then is ambiguous between *Anthostomella* and *Anthostoma*.

LOPHIOSTOMA PUSTULATUM E. & E. Bull. Torr. Club, **25**: 503. 1898, is not distinct from *Pseudovalsa viticola* E. & E. Proc. Acad. Nat. Sci. Phil. 343. 1894.

It is *Pseudovalsa* and not *Lophiostoma* for though some of the ostiola are slightly compressed, the perithecia are, as a rule, enclosed

in a hemispherical stroma two to four in a stroma. The examination of more abundant material recently sent by Mr. Bartholomew, makes this correction necessary.

RAMULARIA SIDALCEAE E. & E. Jour. Mycology 1: 1888

Specimens on *Sidalcea candida* collected by Mr. E. Bartholomew at Ohio City, Colorado, Sept., 1899, vary from the description cited in having the spots confluent over the greater part of the upper surface of the leaf and the tuft of hyphae also densely confluent below. The conidia also vary from globose, 10–15 μ in diam. to oblong or oblong-elliptical, 12–22 $\times$ 8–10 μ .

This is not typical *Ramularia*.